Occurrence of *Xylella fastidiosa* in Texas Sharpshooter Populations

Blake Bextine and Forrest Mitchell

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Pierce’s Disease (PD) of grapes

- Identified in California in 1876 (Pierce)
- The Cost:
  - 1.1 million acres of grapes possibly at risk
  - California grape industry, $3.3 Billion

Chlorosis, Necrosis

Vine death within 3-4 years

Grapevine

- Reduced production from infected vines
- 5-7 years before replacement vines are fully productive
- Up to 10 years of lost yield due to infection

Marked for Removal

The Texas Wine Grape Industry

The Numbers

- 210 commercial vineyards
- approximately 3,200 acres
- $38.4 million

Growth of the Industry

- 14,000 gallons in 1979
- 1.6 million gallons in 1997

http://www.agrilife.org/wine/grape/extension.htm

The Glassy Winged Sharpshooter (GWSS)

- *Homalodisca coagulata* Say
- *Homoptera: Cicadellidae*

- Eggs

- Adult

- The Glassy Winged Sharpshooter (GWSS)

- *Homalodisca coagulata* Say

- *Homoptera: Cicadellidae*
Strain Diversity

1. Pierce’s disease (subsp. piercei)
2. Almond leaf scorch (Dixon-like ALS)
3. East Coast” (subsp. multiplex)
4. Oleander leaf scorch (OLS)
5. “Citrus Variegated Chlorosis (subsp. pauca)

*subsp. from Schaad et al. 2004

Optimizing Real-time PCR Diagnostics:

SYBR® Green-based Strain Diversity

How SYBR Green® Works

Strain Diversity based on amplicon Tm

Greatest influencing factors: CG content and Amplicon length

Success! Correct ID of California Strains
The Texas Strains

- We find two main strains occurring in Texas.
  - A PD-Strain with 100% Identity to the Temecula type strain.
  - An ornamental strain that groups with the "east coast" type strains.

Texas Samples

- *Clastoptera sp.* 33%
- *Cuerna costalis* 0%
- *Graphocephala versuta* 45%
- *Homalodisca coagulata* 37%
- Early Season GWSS 0%
- Late Season GWSS 80%

We are working on getting strain ID on these samples, but are not ready to present the data yet.

Conclusions

- More *Xf*-positive insects late in the season.
- Melting curve analysis data is consistent with:
  - *H. coagulata* carrying the PD-strain
  - *G. versuta* carrying the non-PD strain.

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